



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,964	03/23/2001	Stephen L. Chen		8692
7590	02/02/2004			EXAMINER
Stephen L. Chen 18510 SW Honeywood Dr. Beaverton, OR 97006				MUTSCHLER, BRIAN L
			ART UNIT	PAPER NUMBER
				1753

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.	Applicant(s)	
09/816,964	CHEN, STEPHEN L.	
Examiner	Art Unit	
Brian L. Mutschler	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on \_\_\_\_\_.

2a) This action is **FINAL**.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1 and 2 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 2 is/are rejected.

7) Claim(s) 1 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) All    b) Some \*    c) None of:  
        1. Certified copies of the priority documents have been received.  
        2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
        3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    \* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
    a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) Notice of References Cited (PTO-892)      4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)      5) Notice of Informal Patent Application (PTO-152)  
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 20030323.      6) Other:

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because in each pair consisting of Figures 2a and 2b, 2c and 2d, and 2e and 2f, common reference numbers are joined to each of the figures in the pair of figures. For example, in Figures 2a and 2b, a single reference number **14** is connected to both of the figures. Each figure should be a separate drawing. In other words, each reference number should be pointing to a single drawing. The figures can be corrected by adding additional reference numbers to the figures so that each figure is connected to its own set of reference numbers.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference number not mentioned in the description: **4** (shown in Figure 1a); **8, 10, and 12** (shown in figure 1b); **22** (shown in Figures 2c and 2d); **28 and 30** (shown in Figures 2e and 2f); **5** (shown in Figure 3a); and **34** (shown in Figures 4b and 4c). Each reference number used in the drawings should be identified in the specification. When making the changes in the specification, please make sure not to add new subject matter that is not supported by the drawings or by the specification as originally disclosed because new subject matter cannot be entered into a patent application.
3. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference numbers in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

4. The disclosure is objected to because of the following informalities:
  - a. On page 1 at line 22, please change “resistant” to --resistance--.
  - b. On page 1 at line 29, please delete the word “be” occurring before “melt”.
  - c. On page 2 at line 10, please change “into” to --in--.
  - d. On page 4 at line 10, please change “titled” to --tilted--.
  - e. On page 5 at line 28, please insert --(not shown)-- after the word “supply” because the power supply is not shown in the drawings.
  - f. On page 5 at line 29, please insert --(not shown)-- after the word “wires” because the wires are not shown in the drawings.
  - g. On page 6 at line 21, please insert --be in-- before the word “excess”.

Appropriate correction is required.

***Claim Objections***

5. Claim 1 is objected to because of the following informalities:
  - a. In claim 1 at line 7 on page 8, please change “buffer of electrophoresis” to --an electrophoresis buffer--.
  - b. In claim 1 at line 17 on page 8, please change the phrase “in parallel with said first gel end substantially” to --substantially in parallel with said first gel end--.

- c. In claim 1 at line 20 on page 8, please change the phrase "in parallel with said second gel end substantially" to --substantially in parallel with said second gel end--.
- d. In claim 1 at line 27 on page 8, please change the phrase "conductive ions at user adjustable concentration" to --an adjustable concentration of conductive ions--. (The use of the word "user" is normally avoided in claims whenever possible. Deletion of the word does not change the scope of the claim and avoids possible uncertainty in the determination of what a user is.)
- e. In claim 1 at line 27 of page 8, please change "generating" to --generate--. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

- 6. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 7. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "the ion concentration of said gel matrix" in line 2. There is insufficient antecedent basis for this limitation in the claim because a concentration of ions has not been introduced in association with the gel matrix. It is

suggested that the phrase be changed to --an ion concentration of said gel matrix-- to provide proper antecedent basis for the limitation.

***Allowable Subject Matter***

8. Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter: Claims 1 and 2 would be allowable over the prior art of record because the prior art does not teach or suggest a device having the same limitations recited in the present claims or a device that is capable of performing the required processes. The present invention has a balancing chamber that contains a "balancing liquid" that has an adjustable concentration of conductive ions and minimizes vertical temperature gradients within the gel matrix. The balancing liquid is contained within a balancing chamber that minimizes an inflow of buffer over the gel matrix. Prior art devices having separated chambers typically use wicking, as shown in U.S. Pat. Nos. 3,930,973 and 4,190,517, or controlled flow into adjacent chambers, as shown in U.S. Pat. No. 4,911,816. U.S. Pat. Nos. 3,930,973 and 4,190,517 also use cooling means. However, the prior art of record does not teach the use of a balancing liquid contained within a balancing chamber that is capable of minimizing vertical temperature gradients within the gel matrix. Therefore, the present claims offer the advantage of a means to control

vertical temperature gradients within the gel matrix while enabling the device to be used at high speed.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references teach features similar to the device recited in the present claims:

U.S. Pat. No. 3,494,846 Arquembourg

U.S. Pat. No. 3,947,345 Grandine et al.

U.S. Pat. No. 4,310,407 Kaneko et al.

U.S. Pat. No. 4,814,057 Nishizawa

U.S. Pat. No. 5,074,981 Fairfield

U.S. Pat. No. 6,328,870 Provonchee et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. Mutschler whose telephone number is (703) 305-0180. The examiner can normally be reached on Monday-Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



NAM NGUYEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

blm  
January 21, 2004